SOLAR AMERICA INITIATIVE

Technical Improvement Opportunities

A4 Breakout Session Report-Out

Solar America Initiative
Technical Exchange Meeting
April 17, 2006

How well does LCOE as a metric fit your approach to the PV value chain? In R&D task planning, manufacturing and integration operations? Are there additional key metrics that are not covered by LCOE?

- LCOE must capture true value of solar -
- Must have a level playing field for all PV technologies
- Must include such things as value in multiple locations, value of all technologies, value of use as roofing material, grid outage value, and time of day generation value
- Must capture manufacturing cost as well as price
- LCOE is the right long-term metric but short term issues may exist (i.e. price fluctuations)
- Production volume – build in actual volume increase as part of the grading efforts

What issues do you anticipate in DOE's use of SAM as a tool to aid project evaluation?

- SAM is somewhat simplistic
- Be sure to capture value (e.g. if energy production increases and efficiency doesn't)
- DOE should establish non technical parameters for use by all participants to assure consistency
- Degradation with time of the system must be captured

Brainstorm on types of "deliverables" to provide for assessment of progress – hardware for lab tests, field evaluations, analysis reports, etc.

- Deliver quality, packaged systems that are working and put them under test
- Reliability testing and lifetime prediction / verification are crucial to establishing credible LCOE

Can you design target systems and formulate an R&D project plan within the TIO systems engineering framework? What obstacles do you see, based on the TIO structure and the example performance parameter "requirements" cited before? How well does the TIO structure fit your approach to the PV value chain? In R&D task planning? In manufacturing and integration operations?

- Hard to see how concentrators fits in
- Good starting point
- Tier 2&3 are technology dependent – keep Tier 1 focused on major cost elements and being consistent between technologies
- Raw material availability is not captured in TIOs – needs to be an evaluation factor
- Future prospects for cost reduction even beyond 2015 should be a plus – e.g. scarce materials

Vertical Integration

- System metrics should remain
- Should not have rigid requirement for full vertical integration
- Should not have to go up or down the complete value chain in every single partnership; large teams may not be optimum use of funding
- Some components should perhaps be set apart as a subset ---- for example since there is a small number of U.S. inverter manufacturers, exclusivity may be an issue within partnerships; raw material suppliers will find it hard to be a player
- Universities may find role difficult to define in vertical integration
- Some discomfort with government managing the supply chain with vertical integration
- Vertical integration is mixing up system end goal metric with team construction
- Taking out emphasis on vertical integration does not say “remove systems goal emphasis”